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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,064	06/15/2005	Sachiko Tokumura	042627-0110	4259
23428 7590 02/12/2009 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
PENG, KUO LIANG				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/539,064

**Applicant(s)**

TOKUMURA ET AL.

**Examiner**

Kuo-Liang Peng

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/23/08 Amendment.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

### **DETAILED ACTION**

1. The Applicants' amendment under 37 CFR 1.111 filed September 23, 2008 is acknowledged. Claim 1 is amended. Claims 8-10 are added. Now, Claims 1-10 are pending.
2. The text of those sections of Title 35, U.S. code not included in this action can be found in prior Office Action(s).

#### ***Claim Objections***

3. Claim 10 is objected to because of the following informalities:

In Claim 10 (line 1), should "comprising" be -- consisting essentially of -- as indicated in Applicants' Remarks (page 8, 2<sup>nd</sup> paragraph)?

Appropriate correction is required.

#### ***Claim Rejections - 35 USC §103***

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable by Shimazawa (US 6 235 394).

For Claims 1-2 and 5-9, Shimazawa discloses a thermo-expansive microcapsule comprising a polymeric shell produced by polymerizing monomer (I) (e.g., acrylonitrile), monomer (II) (e.g., acrylic acid, etc.), monomer (III) (e.g., N-methylolacrylamides, etc.), monomer (IV) (e.g., ethylene glycol di(meth)acrylate, etc.) and monomer (V) (e.g., **isobornyl(meth)acrylate, styrene, cyclohexylmethacrylate**, etc.). (col. 3, lines 30-62 and col. 4, line 19 to col. 5, line 48) Shimazawa is silent on the employment of the claimed amide-containing monomers. However, Shimazawa further teaches the use of **(meth)acrylamide** or **N,N-dimethyl(meth)acrylamide**. The court held, "[i]t is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) Notably, the (meth)acrylamide or N,N-dimethyl(meth)acrylamide and the isobornyl(meth)acrylate, styrene or cyclohexylmethacrylate serve the same purpose (i.e., adjusting the T<sub>g</sub> of the polymeric shell). (col. 5, lines 8-25) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a mixture of (meth)acrylamide or N,N-dimethyl(meth)acrylamide and isobornyl(meth)acrylate,

styrene or cyclohexylmethacrylate for preparing the microcapsule with expected success. The identities and amounts of these monomers are elaborated in col. 4, line 19 to col. 5, line 48. Notably, the amounts of Tg enhancing monomers such as the amide-containing monomer and the cyclic side chain-containing monomer are further exemplified in Examples. For instance, Examples 1 and 6 demonstrate the use of the Tg enhancing monomers in amounts of about 17 wt%. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Tg enhancing monomers in terms of the combination of amide-containing monomer and the cyclic side chain-containing monomer in such an amount. Inorganic compound such as silica can be employed for preparing the microcapsule. (col. 5, lines 49-53) The microcapsule has a maximum expanding temperature falling within the claimed range. (Abstract and Examples) The thermo-expansive microcapsules can be utilized to prepare a foamed and molded product. (col. 4, lines 1-14, col. 12, lines 29-61 and Examples) For Claim 3, since Shimazawa's microcapsule is obviously the same as the claimed one, both should possess the same properties, including Tg. For Claim 4, Shimazawa further teaches inorganic compound such as silica gel can be employed for preparing the microcapsule. Shimazawa is silent on the amount of the silica gel. However, the silica gel amount will affect the stability of the medium in which the

polymerization is performed. (col. 5, lines 49-53) In other words, the amount of silica gel is a Result-Effective variable. Notably, the amount of the silica gel in shell of the microcapsule will closely relate to that in the medium. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize whatever amount of the silica gel through routine experimentation in order to achieve a desired stability of the medium and in turn afford a microcapsule having corresponding amount of silica gel in the shell. Especially, Applicants do not show the criticality of the claimed amount of the inorganic compounds. See MPEP 2144.05 (II).

For Applicants' argument (Remarks, page 8, 1<sup>st</sup> and 3<sup>rd</sup> paragraphs and page 10, 2<sup>nd</sup> paragraph), Examiner's position is set forth above. Furthermore, Applicants argue that the amide-containing monomers and the cyclic side chain-containing monomers are not used concurrently as shown in Shimazawa's examples. Examiner disagrees. The examples are merely preferred embodiments. The court held that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

For Applicants' argument (Remarks, page 8, 4<sup>th</sup> paragraph and page 9, last paragraph bridging to page 10, 1<sup>st</sup> paragraph), Examiner disagrees because it would

have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a mixture of amid-containing monomers and cyclic side chain-containing monomers for preparing the microcapsule with expected success, *supra*. In addition, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972)

For Applicants' argument (Remarks, page 9, 2<sup>nd</sup> paragraph), the claim language does not exclude the presence of monomers reactive with carboxyl group. Furthermore, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

5. Applicants' affidavit under 37 CFR 1.132 filed concurrently has been thoroughly reviewed. However, it is not persuasive because of the following reasons: First, Applicants appear to assert that the presence of the monomers reactive to carboxylic group-containing monomers (such as N-methylol acrylamide) in Shimazawa's disclosure yielded inferior polymeric shells as

compared to the claimed ones. However, besides the difference of the absence of N-methylol acrylamide, other comonomers in Applicants' Examples 2 and 6 are not exactly the same as those in Shimazawa's Example 1. This renders the comparison inconclusive. Notably, the proper comparison should have been derived from two monomer mixtures different only in terms of the presence/absence of the monomers reactive to carboxylic group-containing monomers. Second, even if the foregoing comparison is proper, it still cannot obviate the rejection of Claims 1-9 set forth above. Instead, one way to adequately overcome this rejection is to show **unexpected results** of the employment of the mixture of **both** claimed amide-containing monomers **and** claimed cyclic side chain-containing monomers as compared with these two types of monomers used **alone**.

6. Claim 10 would be allowable if rewritten or amended to overcome the claim objection, set forth in this Office action.

Shimazawa discloses the monomer reactive to carboxylic group-containing monomers (such as N-methylol acrylamide) as an essential component for enhancing the heat resistance of the polymeric shells. (col. 4, lines 48-59)



7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck, can be reached on (571)

272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp  
February 10, 2009

/Kuo-Liang Peng/  
Primary Examiner, Art Unit 1796